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Cardiovascular risk factors control in Polish patients with type 2 diabetes within the first two years of diagnosis: results of the ARETAEUS1 study

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Abstract

Background: The practice guidelines of cardiological and diabetological societies emphasise that cardiovascular (CV) risk control in diabetic patients is especially important and should be stricter than in subjects without diabetes. There are little data on the frequency of meeting treatment goals in patients with newly diagnosed diabetes mellitus type 2 (DM2).

Aim: To characterise Polish patients with DM2 diagnosed within the previous two years and to assess if the treatment targets from the current (2008) guidelines of Diabetes Poland regarding control of CV risk factors are met.

Methods: ARETAEUS1 was a cross-sectional questionnaire-based study conducted in various regions of Poland in 2009 (January–April). It involved 1,714 patients of all ages and both genders, who had DM2 treated for less than 24 months. They were recruited by randomly selected physicians.

Results: Total cholesterol treatment goal (< 4.5 mmol/L) was met in 22% of all patients, triglycerides treatment goal (< 1.7 mmol/L) in 44%, LDL cholesterol treatment goal (< 2.6 mmol/L) in 20% and HDL cholesterol treatment goal (> 1.0 mmol/L in men and > 1.3 mmol/L in women) in 55%. Only 13% of the overall population met the goal of blood pressure (BP) below 130/80 mm Hg. When a less restrictive BP control threshold (< 140/90 mm Hg) was applied, 48% of patients had their BP below the threshold. In the analysis of subgroups (patients with and without previous CV events; receiving 1–5 or not receiving antihypertensive drugs; receiving and not receiving statins and fibrates) we observed from 0% to 3.3% of patients meeting three (HbA1c, BP and cholesterol) treatment goals. The percentages of patients meeting two out of three treatment goals were between 8% and 33% in different subgroups. The percentages of patients meeting only one out of three treatment goals ranged from 27.8% to 46.7% or at least one — from 39% to 69%.

Conclusions: Most patients with newly diagnosed diabetes are not meeting their treatment goals regarding control of CV risk factors, which indicates relatively low adherence to national guideline recommendations for diabetes control and primary CV prevention in DM2. Difficulties in achieving CV treatment targets in the diabetic population indicate the need for a great deal of effort on the part of clinicians and patients. Practice guidelines developers should consider what treatment targets are achievable at a reasonable expense of effort.

Key words: clinical practice guidelines, cross-sectional study, cardiovascular disease, diabetes mellitus type 2

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INTRODUCTION

Type 2 diabetes (DM2) increases the cardiovascular (CV) risk [1]. Patients with diabetes have twice the risk of incident myocardial infarction (MI) and stroke as that of the general population. Large numbers of them do not survive their first event. As many as 80% of patients with DM2 will develop, and possibly die of, macrovascular disease. This is associated with a great societal cost, with major loss of life expectancy and quality of life [2, 3].

That is why the practice guidelines of cardiological and diabetological societies emphasise that CV risk factors control in diabetes is especially important and should be stricter than in people without diabetes (targets for blood pressure [BP] and lipids are more restrictive) [4–9]. There are little data on meeting treatment goals in patients with newly diagnosed DM2. The aim of the ARETAEUS1 study was to identify the Polish population in whom DM2 had been diagnosed within the previous two years, to assess if the treatment targets from the current (2008) guidelines of Diabetes Poland (DP) are being met to a satisfactory extent, and if the implementation of preventive strategies is adequate. We present results concerning the control of CV risk factors in this population. The DM2 is one of the priorities of CV disease prevention in clinical practice [6].

METHODS

The details of the ARETAEUS1 study design, protocol and patient characteristics have been described elsewhere [10]. In brief, ARETAEUS1 was a cross-sectional questionnaire-based study conducted in various regions of Poland between January and April 2009. The study aimed to identify the characteristics of patients with newly diagnosed DM2 (defined as diabetes diagnosed within the previous two years according to the current criteria outlined in DP clinical practice guidelines 2008, which are consistent with those of the American Diabetes Association [11]) and to assess if and how many treatment goals recommended by the DP clinical practice guidelines 2008 were being met [4].

The inclusion criteria for the study were: adult patients of either gender and any age, who had a diagnosis of DM2 within the previous two years (i.e. after 1 January, 2007). A random sample of clinicians stratified according to the size of the place of residence (five categories) was drawn from a database containing data of about 85% of all physicians registered in Poland. The patients were recruited over one month and each physician was asked to recruit at least five patients who fulfilled the inclusion criteria; 333 clinicians who agreed to participate and returned questionnaires (227 non-diabetologists, mainly working in primary health care institutions and 106 specialists in diabetology [specialists or physicians who completed their training in diabetology, and who worked in diabetes outpatient clinics]) recruited 1,714 patients. The study questionnaires were filled in by physicians; no data were obtained directly from the patients.

The questionnaire contained items regarding patient characteristics and medical history (demographic data, CV medical history [CV events, hypertension and lipid disorders according to the report of a participating physician based on the current criteria outlined in clinical practice guidelines], medical history concerning diabetes [11], tests results [BP, glycosylated haemoglobin — HbA1c and lipid levels] as well as diabetic drugs [11], antihypertensive drugs, lipid lowering and antiplatelet drugs) and did not include any personal data.

Statistical analysis

Results are presented as mean ± SD or numbers and percentages. We compared proportions of patients achieving treatment goals in different subgroups with χ^2 test. For the comparison of the means the t-test was used (for normal distribution), and the Mann-Whitney U test and Kruskal-Wallis test (for non-normal distribution of the variable). Distribution was estimated on the basis of skewness coefficient and graphical picture. The t-test for equal or nonequal variances was used depending on the result of Levene's test. A p value < 0.05 was considered significant. All statistical analyses were conducted using SPSS v. 14.0.

RESULTS

Results related to diabetes control have been described elsewhere [12]. Seventy one per cent of all patients had HbA1c level above or equal to 6.5%. The current article describes the CV aspects of treatment and care of diabetic patients participating in the ARETAEUS1 study.

Mean age of patients was 60 ± 11 years, 50% were female, mean body mass index (BMI) was 30.6 ± 4.9 kg/m^2, 52% had BMI > 30 kg/m^2. Mean time from diabetes diagnosis was 9.8 ± 7.6 months, 64% were diagnosed with diabetes for less than a year. Mean waist circumference was 96.4 ± ± 13.4 cm in females and 103.1 ± 12.7 cm in males.

Eighty three per cent of patients fulfilled the International Diabetes Federation criteria for the diagnosis of metabolic syndrome [13]. Cardiovascular disease risk factors were common: 77% of patients were reported to have hypertension, 73% — lipid disorders and 10.5% — previous acute coronary syndromes.

Total cholesterol treatment goal (< 4.5 mmol/L) was met in 22% of all patients, triglycerides treatment goal (< 1.7 mmol/L) in 44%, LDL cholesterol treatment goal (< 2.6 mmol/L) in 20% and HDL cholesterol treatment goal (> 1.0 mmol/L in men and > 1.3 mmol/L in women) in 55%. There were significant differences in the numbers of patients achieving these targets between patients using and not using statins, using and not using fibrates and in patients with the diagnosis of lipid disorders (or taking hypolipidaemic drugs) and without such a diagnosis (or not taking drugs) (Table 1). In each case, use of medications indicated generally worse status of risk factor control.

Eighty three per cent of patients with coronary heart disease (CHD) and 52% of patients without CHD were receiving

Table 1. Lipid level control and lipid lowering drugs

Variable	Overall population, % (n = 1,684)	Patients using statins		Patients using fibrates		Patients with the diagnosis of lipid disorders or taking drugs (n = 1,331)	Patients without the diagnosis of lipid disorders and not taking drugs (n = 353)
		Yes (n = 1,041)	No (n = 673)	Yes (n = 227)	No (n = 1,487)		
Total cholesterol:	(n = 1,580)					(n = 1,293)	(n = 272)
< 4.5 mmol/L	**22.0 (348)**	**20.3 (206)**	**25.2 (142)***	**15.3 (34)**	**23.1 (314)***	**18.9 (244)**	**36.0 (98)^**
≥ 4.5 mmol/L	78.0 (1,232)	79.7 (811)	74.8 (421)	84.7 (188)	76.9 (1,044)	81.1 (1,049)	64.0 (174)
LDL cholesterol:	(n = 1,220)					(n = 1,008)	(n = 202)
< 2.6 mmol/L or if CHD < 1.8 mmol/L	**19.9 (243)**	**15.3 (124)**	**29.1 (119)***	**18.4 (29)**	**20.2 (214)**	**16.2 (163)**	**39.1 (79)^**
≥ 2.6 mmol/L or if CHD ≥ 1.8 mmol/L	80.1 (976)	84.7 (687)	70.9 (290)	81.6 (129)	79.8 (848)	83.8 (845)	60.9 (123)^
HDL cholesterol:	(n = 1,322)					(n = 1,096)	(n = 214)
> 1.0 mmol/L males, > 1.3 mmol/L females	**55.3 (731)**	**54.0 (471)**	**57.9 (260)**	**46.8 (88)**	**56.7 (643)***	**53.2 (583)**	**65.0 (139)^**
< 1.0 mmol/L males, < 1.3 mmol/L females	44.7 (591)	46.0 (402)	42.1 (189)	53.2 (100)	43.3 (491)	46.8 (513)	35.0 (75)
Triglycerides:	(n = 1,489)					(n = 1,226)	(n = 251)
< 1.7 mmol/L	**44.3 (660)**	**40.2 (391)**	**52.0 (269)***	**16.1 (35)**	**49.2 (625)***	**37.1 (455)**	**78.5 (197)^**
≥ 1.7 mmol/L	55.7 (829)	59.8 (581)	48.0 (248)	83.9 (183)	50.8 (646)	62.9 (771)	21.5 (54)

*Significant difference between patients taking and not taking drug (statin, fibrate); ^ significant difference between patients with and without lipid disorders; CHD — coronary heart disease; LDL — low density lipoprotein; HDL — high density lipoprotein. Numbers in brackets — number of valid questionnaires

Table 2. Use of acetylsalicylic acid and beta-blockers

Variable	Total (n = 1,700)
Acetylsalicylic acid use	
Patients without CHD (n = 1,213)	52.0 (631)
Patients with CHD (n = 448)	83.0 (372)
Patients without CHD and < 40 years (n = 60)	16.7 (10)
Patients without CHD and ≥ 40 years (n = 1,144)	53.8 (616)
Patients with CHD and < 40 years (n = 1)	100.0 (1)
Patients with CHD and ≥ 40 years (n = 443)	82.8 (367)
Beta-blockers use	
Patients without a history of MI (n = 1,661)	32.7 (543)
Patients with a history of MI (n = 123)	85.4 (105)

CHD — coronary heart disease; MI — myocardial infarction

acetylsalicylic acid (ASA) (Table 2). Similar proportions of patients with or without CHD received statins (80% and 54%, respectively) (Fig. 1). Eighty five per cent of patients with a history of MI received beta-blockers (Table 2). The proportion of patients receiving ASA, statins and antihypertensive drugs increased with age (Table 3). The frequency of CHD, hypertension and lipid disorders also increased with age (Fig. 2).

Regarding BP control, only 13% of the overall population met the goal of BP below 130/80 mm Hg outlined in the guidelines, and the percentage was significantly higher in the subgroup of patients without the diagnosis of hypertension and not taking antihypertensive drugs as compared with patients with the diagnosis of hypertension or taking antihypertensive drugs (Fig. 3A). When we used a less restrictive BP control threshold (< 140/90 mm Hg), 48% of patients had their BP below the threshold and the percentages were, as expected, significantly higher in the subgroup of patients without the diagnosis of hypertension and not taking drugs (Fig. 3B). In patients with the diagnosis of hypertension or taking drugs, among those who met the goal of below 130/80 mm Hg, most were taking one or two antihypertensive drugs (29.5% and 40.4%, respectively) with almost three quarters receiving an angiotensin converting enzyme inhibitor (ACEI), 45% — diuretic and over 46% — beta-blocker. Among those who did not meet that goal, the majority were taking one, two or three antihypertensive drugs (27.4%, 36.3% and 23.7%) with 80% taking ACEI, almost 48% — diuretics and almost 40% — beta-blockers (Fig. 4, Table 4).

Figure 5 and Table 5 present the results of the analysis of the number (and type) of treatment goals met in the total population and in the different subgroups (with or without previous CV events; receiving 1–5 or not receiving antihypertensive drugs, receiving and not receiving statins and fibrates). Data for this outcome were available for 623 patients.

In the analysis of the number (and type) of treatment goals met in the overall population, only 1.4% of patients met

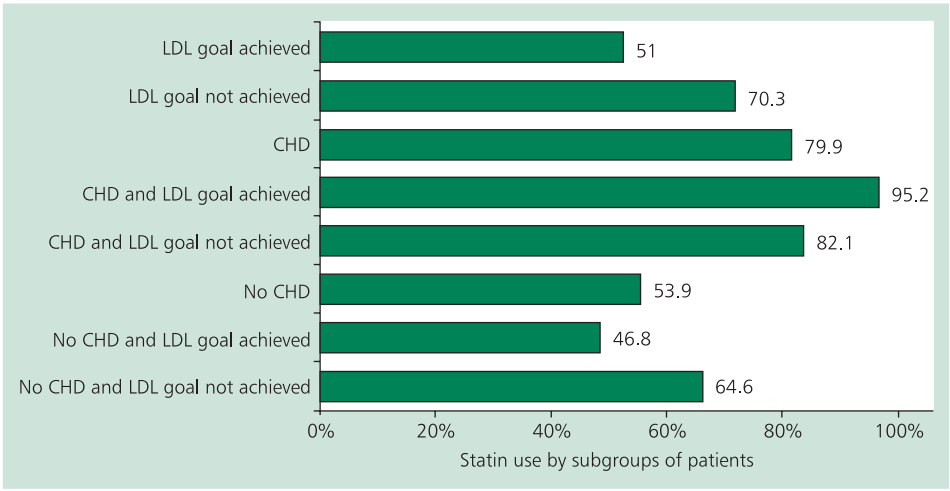

Figure 1. Statin use (%) in subgroups of patients with newly diagnosed diabetes participating in the ARETAEUS1 study; abbreviations as in Table 1

Table 3. Use of acetylsalicylic acid, statins and antihypertensive drugs according to age

Age groups	Total (n = 1,714)
< 40 years (n = 72)	11.1 (8)
41–50 years (n = 229)	27.9 (64)
51–60 years (n = 627)	37.6 (236)
61–70 years (n = 467)	48.8 (228)
> 70 years (n = 305)	52.1 (159)

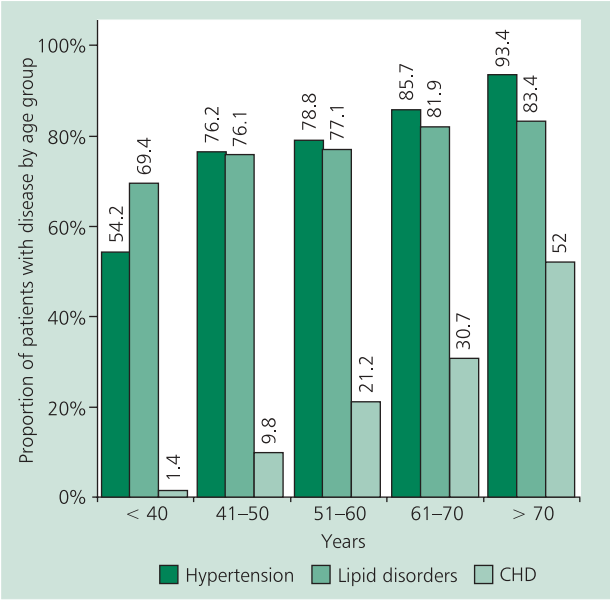

Figure 2. Coronary heart disease (CHD), hypertension (diagnosis or using antihypertensive drugs) and lipid disorders (diagnosis or using lipid lowering drugs) in patients with newly diagnosed diabetes participating in the ARETAEUS1 study by age group. For all diseases, significant differences across all age categories $p < 0.05$

all three goals, 12.5% met two goals, 35.3% met only one goal, and 50.7% met none of the treatment goals (Fig. 5, Table 5). In different subgroups, from 0% to 3.3% of patients met all three treatment goals. More patients without previous CV events met three, two or one treatment goals as compared with patients with previous CV events. In most subgroups, the percentage of patients not meeting any of the treatment goals varied between 31% and 61%. The percentages of patients meeting two out of three treatment goals were between 8% and 33% in different subgroups. The percentage of patients meeting only one out of three treatment goals ranged from about 27.8% to 46.7% and at least one of the treatment goals — from 39% to 69%.

DISCUSSION

This is the first Polish study which provides information on CV risk factors profile and lipid-lowering, antihypertensive and antiplatelet treatment in patients with newly diagnosed (i.e. within two years of diagnosis) DM2. To date, the studies addressing similar problems have been conducted in the general population, in patients with CV disease and in patients with DM1 or DM2 lasting 4–10 years.

Achieving all of the treatment goals (HbA1c, BP and lipid values) was very uncommon in this population (1.4% of patients), and the proportion achieving some of these goals was also unsatisfactory.

The results clearly indicate either inadequate adherence to national clinical practice guideline recommendations, or that those guidelines are too rigorous in their treatment goals. The fact that the BP treatment goal (< 130/90) was fulfilled in 13% of patients, while a less restrictive goal (140/90) was fulfilled in 48% makes the second possibility more probable. The percentage of patients reaching treatment goals is similar to that observed in other European studies [14, 15], which also supports the hypothesis that the treatment goals are rela-

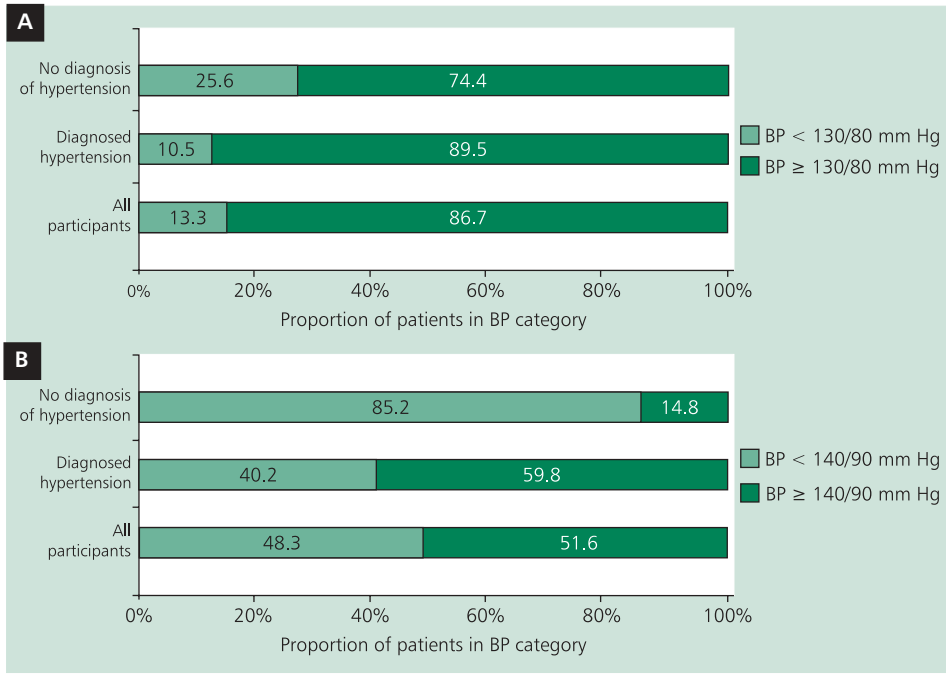

Figure 3. Blood pressure (BP) control and diagnosis of hypertension in patients with newly diagnosed diabetes participating in the ARETAEUS1 study; **A.** More rigorous BP therapeutic goal. There were significant differences between patients with and without hypertension; **B.** Less rigorous BP therapeutic goal. There were significant differences between patients with and without hypertension

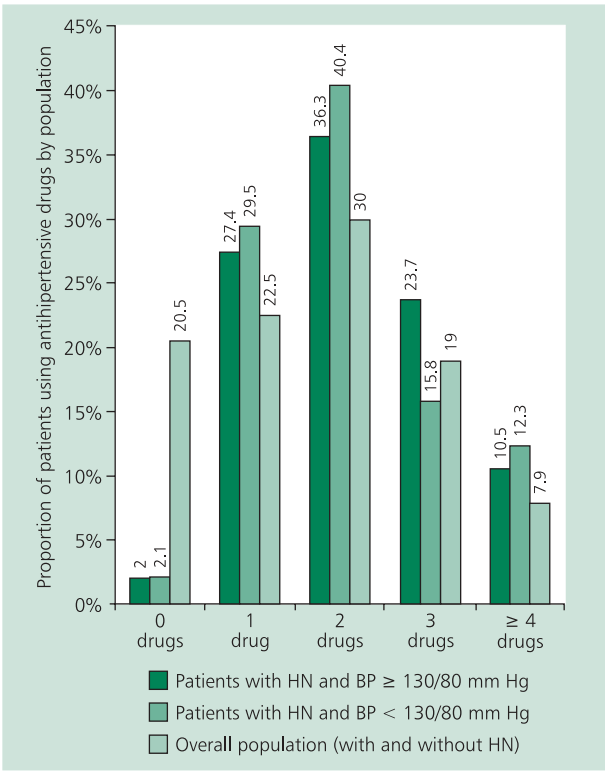

Figure 4. The number of antihypertensive drugs used in patients with newly diagnosed diabetes participating in the ARETAEUS1 study. There was significant difference between patients with and without hypertension (HN) in all categories together (patients without HN had zero drugs use, or in one case use of one drug)

tively too strict and not easily enough reached in clinical practice. In some guidelines this problem has also been noticed. The most recent position statement of the European Society of Hypertension [16, 17] contains a less strong recommendation to achieve BP below 130/80 mm Hg in diabetic patients than those featured in the previous guidelines of this society [18]. Moreover, in one study [19], tight control of systolic BP (< 130 mm Hg) in patients with diabetes and CHD was not associated with improved CV outcomes compared to usual control (systolic BP < 140 mm Hg).

The new DP guidelines (2011) also recommend less stringent target BP of < 140/90 mm Hg in all diabetic patients except those with newly diagnosed hypertension and those with diabetic nephropathy (who should aim at < 130/80 mm Hg values) [20].

We cannot exclude the possibility that physicians do not put enough attention into prevention and do not find time to explain to patients the importance of prevention, and that results in low compliance of patients (especially with newly diagnosed DM2).

Another possibility is illustrated by the fact that in an observational study (POLKARD Study Group) over 60% of subjects without the diagnosis of hyperlipidaemia and not receiving hypolipaemic drugs had total cholesterol and LDL-cholesterol levels above the treatment goals [21]. It shows that risk factors are not only managed inadequately but are also under-diagnosed.

Hypertension was better diagnosed in our population of patients. Only 15% of patients without the diagnosis of

Table 4. Classes of antihypertensive drugs used in studied patients

Drug classes	Overall population (n = 1,689)	Patients with diagnosis of hypertension or taking antihypertensive drugs (n = 1,384)		Patients without diagnosis of hypertension and not taking antihypertensive drugs (n = 305)	
ACEI	64.9 (1,112)	74 (108)	79.9 (989)	0*	0*
ARB	13.3 (228)	13.7 (20)	16.6 (206)	0*	0*
Diuretic	38.7 (664)	45.2 (66)	47.8 (592)	0*	0*
Calcium blocker	24.2 (415)	28.1 (41)	29.5 (365)	0*	0*
Beta-blocker in patients without MI (n = 1,661)	32.7 (543)	46.5 (66)	39.5 (470)	0*	0*

*Significant difference between patients with and without hypertension; ACEI — angiotensin converting enzyme inhibitor; ARB — angiotensin receptor blocker; MI — myocardial infarction

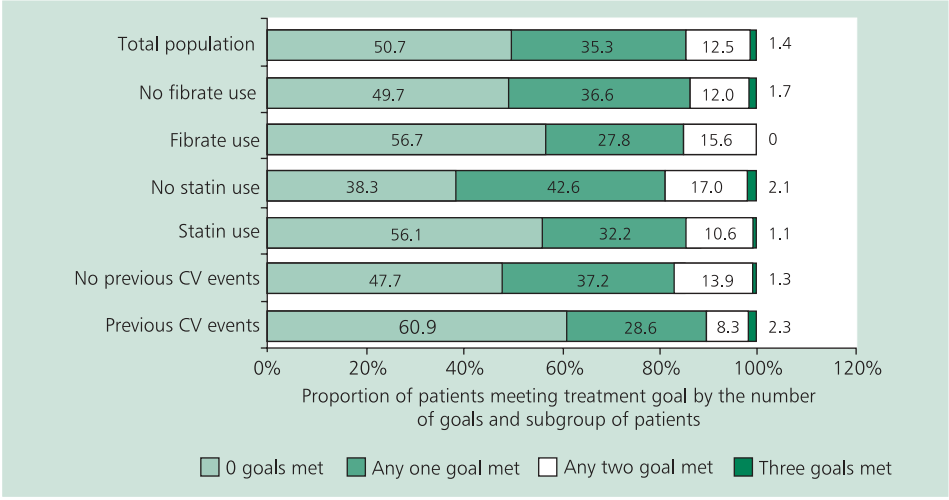

Figure 5. Meeting treatment goals in patients with newly diagnosed diabetes participating in the ARETAEUS1 study — results in subgroups according to current lipid lowering treatment (n = 623) and previous cardiovascular (CV) events (n = 609). There was significant difference between groups in each category (i.e. with and without previous CV events etc.)

hypertension and not taking antihypertensive drugs had BP > 140/90 mm Hg.

In our study, in the subgroup of patients with diagnosed hypertension, only 2% of those with BP above 130/80 mm Hg did not receive any antihypertensive drug. So the problem is not with deciding on initiation of the pharmacological treatment for patients with diagnosed hypertension, but rather with inadequate drug use — too often only one drug is used, and we can also assume that the doses are too low. In a study assessing the competence of Polish general practitioners in terms of their compliance with hypertension treatment guidelines, poor compliance with guidelines was noted for patients with diabetes mellitus [22].

The adherence to clinical practice guidelines is better when the recommendations are clear, simple and easy to follow (e.g. using specific drugs in specific clinical situations — ASA in CHD [83% of study participants with CHD received it] or beta-blocker in patients with previous MI [85% of this population received this drug]). Similar proportions were observed in the Polish parts of the EUROASPIRE (European Action on Secondary Prevention through Intervention to Reduce Events) III survey conducted among hospitalised patients with CHD [23].

The results of the ARETAEUS1 study provide valuable information for doctors and nurses delivering care to patients with diabetes and those teaching medical students, but also for experts developing practice guidelines. The information is directed mostly to a Polish audience, but issues are likely to be general. Clinicians can find out how their colleagues manage newly diagnosed diabetes. Clinicians who teach students and diabetic patients should, on the basis of these results, point out to their audiences that as CV prevention is important in diabetes, there are major difficulties in achieving treatment targets, so much effort is required on the part of clinicians and patients. Authors of practice guidelines sho-

Table 5. Meeting treatment goals in studied patients

Characteristic	Number of patients in the subgroups ^	Three treatment goals met	Only two treatment goals met (excludes patients from previous column who met all three goals)				Only one treatment goal met (excludes patients from two previous columns who met more than one goal)				Zero treatment goals met
		HbA1c, BP and LDL	Any	HbA1c and BP	HbA1c and LDL	BP and LDL	Any	BP	HbA1c	LDL	HbA1c, BP, LDL, all above the recommended levels
Total (n = 623)^		1.4 (9)	12.5 (78)	3.5 (22)	7.4 (46)	1.6 (10)	35.3 (220)	6.9 (43)	18.0 (112)	10.4 (65)	50.7 (316)
Current hypertension treatment (n = 609)											
Number of drugs:	0 (n = 104)*	1.0 (1)	24.0 (25)	7.7 (8)	10.6 (11)	5.8 (6)	44.2 (46)	15.4 (16)	16.3 (17)	12.5 (13)	30.8 (32)
	1 (n = 146)	0.7 (1)	12.3 (18)	2.1 (3)	9.6 (14)	0.7 (1)	34.2 (50)	5.5 (8)	18.5 (27)	10.3 (15)	52.7 (77)
	2 (n = 182)	3.3 (6)	8.8 (16)	1.6 (3)	6.0 (11)	1.1 (2)	33.0 (60)	6.0 (11)	16.5 (30)	10.4 (19)	54.9 (100)
	3 (n = 126)	0.8 (1)	10.3 (13)	4.0 (5)	6.3 (8)	0	30.2 (38)	3.2 (4)	17.5 (22)	9.5 (12)	58.7 (74)
	4 (n = 45)	0	8.9 (4)	2.2 (1)	4.4 (2)	2.2 (1)	46.7 (21)	8.9 (4)	26.7 (12)	11.1 (5)	44.4 (20)
	5 (n = 6)	0	33.3 (2)	33.3 (2)	0	0	33.3 (2)	0	16.7 (1)	16.7 (1)	33.3 (2)

^ Only the patients for whom data on all treatment goals was available; *significant difference between groups in current category; BP — blood pressure; HbA1c — glycosylated haemoglobin; LDL — low density lipoprotein; meeting treatment goals in other subgroups was presented in another publication [11]; How to read the table: In the first column, the name of the subgroup (or the total population) is presented and in the second column subgroups (with number of patients in a subgroup) are presented, then percentage of patients with three, any two, specific two, any one and specific one and none of the treatment goals met in each subgroup are presented.

uld pay attention to what is achievable at a reasonable expense of effort and should consider direct proven benefits and costs (money, time and effort) required to achieve treatment targets.

CONCLUSIONS

1. Most patients with newly diagnosed diabetes are not meeting their treatment goals regarding control of CV risk factors, which indicates relatively low adherence to national guideline recommendations for diabetes control and primary CV prevention in DM2.
2. Clinicians who teach students and diabetic patients should point out that there are difficulties in achieving treatment targets in the diabetic population, meaning that a great deal of effort is required on the part of clinicians and patients to meet these goals.
3. Practice guidelines developers should consider which treatment targets are achievable at a reasonable expense of effort.

CONTRIBUTORS

All of the authors contributed to the study concept, design, and implementation, and to the content and development of this report.

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Conflicts of interest: Dr Małgorzata M. Bała: nothing to declare; Dr Ewa Płaczkiewicz-Jankowska: nothing to declare; Dr Roman Topór-Mądry: nothing to declare; Dr Wiktoria Leśniak: nothing to declare; Prof. Roman Jaeschke: a deputy editor of a medical journal which draws part of its revenue from pharmaceutical advertisements including drugs for diabetes; Prof. Jacek Sieradzki: nothing to declare; Prof. Władysław Grzeszczak and Prof. Waldemar Banasiak: received honoraria from Teva Pharmaceuticals Polska Sp. z o.o. for presenting the study results at the conference of Diabetes Poland.

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Kontrola czynników ryzyka sercowo-naczyniowego u polskich chorych na cukrzycę typu 2 dwa lata od rozpoznania choroby: wyniki badania ARETAEUS1

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Streszczenie

Wstęp: W wytycznych praktyki klinicznej opracowywanych przez kardiologiczne i diabetologiczne towarzystwa naukowe podkreśla się, że kontrola sercowo-naczyniowych czynników ryzyka jest szczególnie ważna u chorych na cukrzycę i powinna być ściślejsza niż u osób bez cukrzycy. Nie ma wielu danych na temat częstości spełniania kryteriów kontroli choroby u osób ze świeżo rozpoznaną cukrzycą typu 2.

Cel: Celem pracy było scharakteryzowanie chorych na cukrzycę typu 2 rozpoznaną w ciągu ostatnich 2 lat w Polsce i ocena spełnienia kryteriów kontroli cukrzycy dotyczących czynników ryzyka sercowo-naczyniowego zalecanych w wytycznych praktyki klinicznej Polskiego Towarzystwa Diabetologicznego z 2008 r.

Metody: ARETAEUS1 było przekrojowym badaniem kwestionariuszowym przeprowadzonym w wielu regionach Polski w 2009 r. (styczeń–kwiecień). Badaniem objęto 1714 chorych na cukrzycę typu 2 w każdym wieku i obu płci leczonych przez < 24 miesiące, włączonych do badania przez losowo wybranych lekarzy.

Wyniki: Kryterium wyrównania stężenia: cholesterolu całkowitego (< 4,5 mmol/l) spełniło 22% chorych, triglicerydów (< 1,7 mmol/l) — 44%, cholesterolu LDL (< 2,6 mmol/l) — 20%, a cholesterolu HDL (> 1,0 mmol/l u mężczyzn i > 1,3 mmol/l u kobiet) — 55% osób. Jedynie 13% pacjentów spełniło kryterium wyrównania ciśnienia tętniczego < 130/80 mm Hg. Gdy zastosowano mniej restrykcyjne kryterium wyrównania ciśnienia tętniczego (< 140/90 mm Hg) u 48% osób stwierdzono ciśnienie tętnicze poniżej tego progu. W analizie przeprowadzonej w podgrupach (osób bez i po przebytych incydentach sercowo-naczyniowych; otrzymujących 1–5 lub nieotrzymujących leków przeciwnadciśnieniowych, otrzymujących i nieotrzymujących statyn i fibratów) zaobserwowano, że 0–3,3% chorych spełniło 3 kryteria kontroli choroby (HbA_{1c}, ciśnienie tętnicze i stężenie cholesterolu). Odsetki pacjentów spełniających 2 z 3 kryteriów kontroli choroby wynosiły w różnych podgrupach 8–33%. Odsetki chorych spełniających 1 z 3 kryteriów kontroli choroby wynosiły 27,8–46,7%, a spełniających co najmniej 1 kryterium kontroli choroby — 39–69%.

Wnioski: Większość osób ze świeżo rozpoznaną cukrzycą typu 2 nie spełniło kryteriów kontroli cukrzycy dotyczących czynników ryzyka sercowo-naczyniowego, co wskazuje na stosunkowo małą częstość przestrzegania polskich zaleceń klinicznych dotyczących kontroli cukrzycy i pierwotnej profilaktyki sercowo-naczyniowej w cukrzycy typu 2. Trudności w osiągnięciu sercowo-naczyniowych celów leczenia u chorych na cukrzycę wskazują na potrzebę podjęcia wysiłków ze strony lekarzy i pacjentów skierowanych na osiągnięcie tych celów. Osoby opracowujące wytyczne praktyki klinicznej powinny rozważyć, jakie kryteria kontroli czynników ryzyka są możliwe do osiągnięcia przy racjonalnym nakładzie wysiłków.

Słowa kluczowe: badanie przekrojowe, choroba sercowo-naczyniowa, cukrzyca typu 2, wytyczne praktyki klinicznej

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